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Title : NOVEL GENES ENCODING PROTEINS HAVING PROGNASTIC,
DIAGNOSTIC, PREVENTIVE, THERAPEUTIC AND OTHER USES

Box Patent Application
Commissioner for Patents
Washington, D.C. 20231

STATEMENT UNDER 37 CFR §1.821(f)

I hereby state, as required by 37 C.F.R. §1.821(f), that the content of the paper and computer-readable copy of the Sequence Listing, submitted in accordance with 37 C.F.R. §§1.821(c) and (e), respectively, are the same.

Respectfully submitted,

Date: March 16, 2001

for



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USA G. Gray
Typed or Printed Name of Person Signing Certificate

SEQUENCE LISTING

<110> Holtzman, Douglas A.
 Gearing, David P.
 Pan, Yang

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<211> 411

<212> PRT

<213> Homo sapiens

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          20          25          30
Arg Val Pro Lys Thr Leu Val Leu Val Val Ala Ala Val Leu Leu Leu
        35          40          45

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Val Ser Ala Glu Ser Ala Leu Ile Thr Gln Gln Asp Leu Ala Pro Gln
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 Gln Arg Ala Ala Pro Gln Gln Lys Arg Ser Ser Pro Ser Glu Gly Leu
 65 70 75 80
 Cys Pro Pro Gly His His Ile Ser Glu Asp Gly Arg Asp Cys Ile Ser
 85 90 95
 Cys Lys Tyr Gly Gln Asp Tyr Ser Thr His Trp Asn Asp Leu Leu Phe
 100 105 110
 Cys Leu Arg Cys Thr Arg Cys Asp Ser Gly Glu Val Glu Leu Ser Pro
 115 120 125
 Cys Thr Thr Thr Arg Asn Thr Val Cys Gln Cys Glu Glu Gly Thr Phe
 130 135 140
 Arg Glu Glu Asp Ser Pro Glu Met Cys Arg Lys Cys Arg Thr Gly Cys
 145 150 155 160
 Pro Arg Gly Met Val Lys Val Gly Asp Cys Thr Pro Trp Ser Asp Ile
 165 170 175
 Glu Cys Val His Lys Glu Ser Gly Ile Ile Ile Gly Val Thr Val Ala
 180 185 190
 Ala Val Val Leu Ile Val Ala Val Phe Val Cys Lys Ser Leu Leu Trp
 195 200 205
 Lys Lys Val Leu Pro Tyr Leu Lys Gly Ile Cys Ser Gly Gly Gly Gly
 210 215 220
 Asp Pro Glu Arg Val Asp Arg Ser Ser Gln Arg Pro Gly Ala Glu Asp
 225 230 235 240
 Asn Val Leu Asn Glu Ile Val Ser Ile Leu Gln Pro Thr Gln Val Pro
 245 250 255
 Glu Gln Glu Met Glu Val Gln Glu Pro Ala Glu Pro Thr Gly Val Asn
 260 265 270
 Met Leu Ser Pro Gly Glu Ser Glu His Leu Leu Glu Pro Ala Glu Ala
 275 280 285
 Glu Arg Ser Gln Arg Arg Arg Leu Leu Val Pro Ala Asn Glu Gly Asp
 290 295 300
 Pro Thr Glu Thr Leu Arg Gln Cys Phe Asp Asp Phe Ala Asp Leu Val
 305 310 315 320
 Pro Phe Asp Ser Trp Glu Pro Leu Met Arg Lys Leu Gly Leu Met Asp
 325 330 335
 Asn Glu Ile Lys Val Ala Lys Ala Glu Ala Ala Gly His Arg Asp Thr
 340 345 350
 Leu Tyr Thr Met Leu Ile Lys Trp Val Asn Lys Thr Gly Arg Asp Ala
 355 360 365
 Ser Val His Thr Leu Leu Asp Ala Leu Glu Thr Leu Gly Glu Arg Leu
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 Tyr Leu Glu Gly Asn Ala Asp Ser Ala Met Ser
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 gacttcgcgg gaccgtggcg catgtttcct gggagttact gatcatcttc tttgaagaaa 180
 c atg aag tta cac tat gtt gct gtg ctt act cta gcc atc ctg atg ttc 229
 Met Lys Leu His Tyr Val Ala Val Leu Thr Leu Ala Ile Leu Met Phe
 1 5 10 15

 ctg aca tgg ctt cca gaa tca ctg agc tgt aac aaa gca ctc tgt gct 277
 Leu Thr Trp Leu Pro Glu Ser Leu Ser Cys Asn Lys Ala Leu Cys Ala
 20 25 30

 agt gat gtg agc aaa tgc ctc att cag gag ctc tgc cag tgc cgg ccg 325
 Ser Asp Val Ser Lys Cys Leu Ile Gln Glu Leu Cys Gln Cys Arg Pro
 35 40 45

 gga gaa ggc aat tgc tcc tgc tgt aag gag tgc atg ctg tgt ctt ggg 373
 Gly Glu Gly Asn Cys Ser Cys Cys Lys Glu Cys Met Leu Cys Leu Gly
 50 55 60

 gcc ctt tgg gac gag tgc tgt gac tgt gtt ggt atg tgt aat cct cga 421
 Ala Leu Trp Asp Glu Cys Cys Asp Cys Val Gly Met Cys Asn Pro Arg
 65 70 75 80

 aat tat agt gac aca cct cca act tca aag agc aca gtg gag gag ctg 469
 Asn Tyr Ser Asp Thr Pro Pro Thr Ser Lys Ser Thr Val Glu Glu Leu
 85 90 95

 cat gaa ccg atc cct tct ctc ttc cgg gca ctc aca gaa gga gat act 517
 His Glu Pro Ile Pro Ser Leu Phe Arg Ala Leu Thr Glu Gly Asp Thr
 100 105 110

 cag ttg aat tgg aac atc gtt tct ttc cct gtt gca gaa gaa ctt tca 565
 Gln Leu Asn Trp Asn Ile Val Ser Phe Pro Val Ala Glu Glu Leu Ser
 115 120 125

 cat cat gag aat ctg gtt tca ttt tta gaa act gtg aac cag cca cac 613
 His His Glu Asn Leu Val Ser Phe Leu Glu Thr Val Asn Gln Pro His
 130 135 140

 cac cag aat gtg tct gtc ccc agc aat aat gtt cac gcg cct tat tcc 661
 His Gln Asn Val Ser Val Pro Ser Asn Asn Val His Ala Pro Tyr Ser
 145 150 155 160

 agt gac aaa gaa cac atg tgt act gtg gtt tat ttt gat gac tgc atg 709
 Ser Asp Lys Glu His Met Cys Thr Val Val Tyr Phe Asp Asp Cys Met
 165 170 175

 tcc ata cat cag tgt aaa ata tcc tgt gag tcc atg gga gca tcc aaa 757
 Ser Ile His Gln Cys Lys Ile Ser Cys Glu Ser Met Gly Ala Ser Lys
 180 185 190

 tat cgc tgg ttt cat aat gcc tgc tgc gag tgc att ggt cca gaa tgt 805
 Tyr Arg Trp Phe His Asn Ala Cys Cys Glu Cys Ile Gly Pro Glu Cys
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220

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<213> Homo sapiens
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Leu	Thr	Trp	Leu	Pro	Glu	Ser	Leu	Ser	Cys	Asn	Lys	Ala	Leu	Cys	Ala
			20					25					30		
Ser	Asp	Val	Ser	Lys	Cys	Leu	Ile	Gln	Glu	Leu	Cys	Gln	Cys	Arg	Pro
		35					40					45			
Gly	Glu	Gly	Asn	Cys	Ser	Cys	Cys	Lys	Glu	Cys	Met	Leu	Cys	Leu	Gly
		50				55					60				
Ala	Leu	Trp	Asp	Glu	Cys	Cys	Asp	Cys	Val	Gly	Met	Cys	Asn	Pro	Arg
65					70					75					80
Asn	Tyr	Ser	Asp	Thr	Pro	Pro	Thr	Ser	Lys	Ser	Thr	Val	Glu	Glu	Leu
				85					90					95	
His	Glu	Pro	Ile	Pro	Ser	Leu	Phe	Arg	Ala	Leu	Thr	Glu	Gly	Asp	Thr
			100					105					110		
Gln	Leu	Asn	Trp	Asn	Ile	Val	Ser	Phe	Pro	Val	Ala	Glu	Glu	Leu	Ser
		115					120					125			
His	His	Glu	Asn	Leu	Val	Ser	Phe	Leu	Glu	Thr	Val	Asn	Gln	Pro	His
		130				135					140				
His	Gln	Asn	Val	Ser	Val	Pro	Ser	Asn	Asn	Val	His	Ala	Pro	Tyr	Ser
145					150					155					160
Ser	Asp	Lys	Glu	His	Met	Cys	Thr	Val	Val	Tyr	Phe	Asp	Asp	Cys	Met
				165					170					175	
Ser	Ile	His	Gln	Cys	Lys	Ile	Ser	Cys	Glu	Ser	Met	Gly	Ala	Ser	Lys
			180					185					190		
Tyr	Arg	Trp	Phe	His	Asn	Ala	Cys	Cys	Glu	Cys	Ile	Gly	Pro	Glu	Cys
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<212> DNA

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<221> CDS

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ctg ctg ctc ggc tcc cgg ccg gcc cgc ggc gcc ggc cca gag ccc ccc	96
Leu Leu Leu Gly Ser Arg Pro Ala Arg Gly Ala Gly Pro Glu Pro Pro	
20 25 30	
gtg ctg ccc atc cgt tct gag aag gag ccg ctg ccc gtt cgg gga gcg	144
Val Leu Pro Ile Arg Ser Glu Lys Glu Pro Leu Pro Val Arg Gly Ala	
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gca ggc tgc acc ttc ggc ggg aag gtc tat gcc ttg gac gag acg tgg	192
Ala Gly Cys Thr Phe Gly Gly Lys Val Tyr Ala Leu Asp Glu Thr Trp	
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cac ccg gac cta ggg gag cca ttc ggg gtg atg cgc tgc gtg ctg tgc	240
His Pro Asp Leu Gly Glu Pro Phe Gly Val Met Arg Cys Val Leu Cys	
65 70 75 80	
gcc tgc gag gcg cct cag tgg ggt cgc cgt acc agg ggc cct ggc agg	288
Ala Cys Glu Ala Pro Gln Trp Gly Arg Arg Thr Arg Gly Pro Gly Arg	
85 90 95	
gtc agc tgc aag aac atc aaa cca gag tgc cca acc ccg gcc tgt ggg	336
Val Ser Cys Lys Asn Ile Lys Pro Glu Cys Pro Thr Pro Ala Cys Gly	
100 105 110	
cag ccg cgc cag ctg ccg gga cac tgc tgc cag acc tgc ccc cag gag	384
Gln Pro Arg Gln Leu Pro Gly His Cys Cys Gln Thr Cys Pro Gln Glu	
115 120 125	
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Arg Ser Ser Ser Glu Arg Gln Pro Ser Gly Leu Ser Phe Glu Tyr Pro	
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cgg gac ccg gag cat cgc agt tat agc gac cgc ggg gag cca ggc gct	480
Arg Asp Pro Glu His Arg Ser Tyr Ser Asp Arg Gly Glu Pro Gly Ala	
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Glu Glu Arg Ala Arg Gly Asp Gly His Thr Asp Phe Val Ala Leu Leu	
165 170 175	

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Thr Gly Pro Arg Ser Gln Ala Val Ala Arg Ala Arg Val Ser Leu Leu	
180 185 190	
cgc tct agc ctc cgc ttc tct atc tcc tac agg cgg ctg gac cgc cct	624
Arg Ser Ser Leu Arg Phe Ser Ile Ser Tyr Arg Arg Leu Asp Arg Pro	
195 200 205	
acc agg atc cgc ttc tca gac tcc aat ggc agt gtc ctg ttt gag cac	672
Thr Arg Ile Arg Phe Ser Asp Ser Asn Gly Ser Val Leu Phe Glu His	
210 215 220	
cct gca gcc ccc acc caa gat ggc ctg gtc tgt ggg gtg tgg cgg gca	720
Pro Ala Ala Pro Thr Gln Asp Gly Leu Val Cys Gly Val Trp Arg Ala	
225 230 235 240	
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Val Pro Arg Leu Ser Leu Arg Leu Leu Arg Ala Glu Gln Leu His Val	
245 250 255	
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Ala Leu Val Thr Leu Thr His Pro Ser Gly Glu Val Trp Gly Pro Leu	
260 265 270	
atc cgg cac cgg gcc ctg gct gca gag acc ttc agt gcc atc ctg act	864
Ile Arg His Arg Ala Leu Ala Ala Glu Thr Phe Ser Ala Ile Leu Thr	
275 280 285	
cta gaa ggc ccc cca cag cag ggc gta ggg ggc atc acc ctg ctc act	912
Leu Glu Gly Pro Pro Gln Gln Gly Val Gly Gly Ile Thr Leu Leu Thr	
290 295 300	
ctc agt gac aca gag gac tcc ttg cat ttt ttg ctg ctc ttc cga ggg	960
Leu Ser Asp Thr Glu Asp Ser Leu His Phe Leu Leu Leu Phe Arg Gly	
305 310 315 320	
ctg ctg gaa ccc agg agt ggg gga cta acc cag gtt ccc ttg agg ctc	1008
Leu Leu Glu Pro Arg Ser Gly Gly Leu Thr Gln Val Pro Leu Arg Leu	
325 330 335	
cag att cta cac cag ggg cag cta ctg cga gaa ctt cag gcc aat gtc	1056
Gln Ile Leu His Gln Gly Gln Leu Leu Arg Glu Leu Gln Ala Asn Val	
340 345 350	
tca gcc cag gaa cca ggc ttt gct gag gtg ctg ccc aac ctg aca gtc	1104
Ser Ala Gln Glu Pro Gly Phe Ala Glu Val Leu Pro Asn Leu Thr Val	
355 360 365	
cag gag atg gac tgg ctg gtg ctg ggg gag ctg cag atg gcc ctg gag	1152
Gln Glu Met Asp Trp Leu Val Leu Gly Glu Leu Gln Met Ala Leu Glu	
370 375 380	
tgg gca ggc agg cca ggg ctg cgc atc agt gga cac att gct gcc agg	1200
Trp Ala Gly Arg Pro Gly Leu Arg Ile Ser Gly His Ile Ala Ala Arg	
385 390 395 400	
aag agc tgc gac gtc ctg caa agt gtc ctt tgt ggg gct gat gcc ctg	1248

Lys Ser Cys Asp Val Leu Gln Ser Val Leu Cys Gly Ala Asp Ala Leu	
405 410 415	
atc cca gtc cag acg ggt gct gcc ggc tca gcc agc ctc acg ctg cta	1296
Ile Pro Val Gln Thr Gly Ala Ala Gly Ser Ala Ser Leu Thr Leu Leu	
420 425 430	
gga aat ggc tcc ctg atc tat cag gtg caa gtg gta ggg aca agc agt	1344
Gly Asn Gly Ser Leu Ile Tyr Gln Val Gln Val Val Gly Thr Ser Ser	
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Glu Val Val Ala Met Thr Leu Glu Thr Lys Pro Gln Arg Arg Asp Gln	
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Arg Thr Val Leu Cys His Met Ala Gly Leu Gln Pro Gly Gly His Thr	
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Ala Val Gly Ile Cys Pro Gly Leu Gly Ala Arg Gly Ala His Met Leu	
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ctg cag aat gag ctc ttc ctg aac gtg ggc acc aag gac ttc cca gac	1536
Leu Gln Asn Glu Leu Phe Leu Asn Val Gly Thr Lys Asp Phe Pro Asp	
500 505 510	
gga gag ctt cgg ggg cac gtg gct gcc ctg ccc tac tgt ggg cat agc	1584
Gly Glu Leu Arg Gly His Val Ala Ala Leu Pro Tyr Cys Gly His Ser	
515 520 525	
gcc cgc cat gac acg ctg tcc gtg ccc cta gca gga gcc ctg gtg cta	1632
Ala Arg His Asp Thr Leu Ser Val Pro Leu Ala Gly Ala Leu Val Leu	
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ccc cct gtg aag agc caa gca gca ggg cac gcc tgg ctt tcc ttg gat	1680
Pro Pro Val Lys Ser Gln Ala Ala Gly His Ala Trp Leu Ser Leu Asp	
545 550 555 560	
acc cac tgt cac ctg cac tat gaa gtg ctg ctg gct ggg ctt ggt ggc	1728
Thr His Cys His Leu His Tyr Glu Val Leu Leu Ala Gly Leu Gly Gly	
565 570 575	
tca gaa caa ggc act gtc act gcc cac ctc ctt ggg cct cct gga acg	1776
Ser Glu Gln Gly Thr Val Thr Ala His Leu Leu Gly Pro Pro Gly Thr	
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cca ggg cct cgg cgg ctg ctg aag gga ttc tat ggc tca gag gcc cag	1824
Pro Gly Pro Arg Arg Leu Leu Lys Gly Phe Tyr Gly Ser Glu Ala Gln	
595 600 605	
ggt gtg gtg aag gac ctg gag ccg gaa ctg ctg cgg cac ctg gca aaa	1872
Gly Val Val Lys Asp Leu Glu Pro Glu Leu Leu Arg His Leu Ala Lys	
610 615 620	
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Gly Met Ala Ser Leu Met Ile Thr Thr Lys Gly Ser Pro Arg Gly Glu	

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Leu Arg Gly Gln Arg Arg Thr Val Ile Cys Asp Pro Val Val Cys Pro				
	645	650	655	
ccg ccc agc tgc cca cac ccg gtg cag gct ccc gac cag tgc tgc cct				2016
Pro Pro Ser Cys Pro His Pro Val Gln Ala Pro Asp Gln Cys Cys Pro				
	660	665	670	
gtt tgc cct gag aaa caa gat gtc aga gac ttg cca ggg ctg cca agg				2064
Val Cys Pro Glu Lys Gln Asp Val Arg Asp Leu Pro Gly Leu Pro Arg				
	675	680	685	
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Ser Arg Asp Pro Gly Glu Gly Cys Tyr Phe Asp Gly Asp Arg Ser Trp				
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cgg gca gcg ggt acg cgg tgg cac ccc gtt gtg ccc ccc ttt ggc tta				2160
Arg Ala Ala Gly Thr Arg Trp His Pro Val Val Pro Pro Phe Gly Leu				
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Ile Lys Cys Ala Val Cys Thr Cys Lys Gly Gly Thr Gly Glu Val His				
	725	730	735	
tgt gag aag gtg cag tgt ccc cgg ctg gcc tgt gcc cag cct gtg cgt				2256
Cys Glu Lys Val Gln Cys Pro Arg Leu Ala Cys Ala Gln Pro Val Arg				
	740	745	750	
gtc aac ccc acc gac tgc tgc aaa cag tgt cca gtg ggg tcg ggg gcc				2304
Val Asn Pro Thr Asp Cys Cys Lys Gln Cys Pro Val Gly Ser Gly Ala				
	755	760	765	
cac ccc cag ctg ggg gac ccc atg cag gct gat ggg ccc cgg ggc tgc				2352
His Pro Gln Leu Gly Asp Pro Met Gln Ala Asp Gly Pro Arg Gly Cys				
	770	775	780	
cgt ttt gct ggg cag tgg ttc cca gag agt cag agc tgg cac ccc tca				2400
Arg Phe Ala Gly Gln Trp Phe Pro Glu Ser Gln Ser Trp His Pro Ser				
	785	790	795	800
gtg ccc cct ttt gga gag atg agc tgt atc acc tgc aga tgt ggg gca				2448
Val Pro Pro Phe Gly Glu Met Ser Cys Ile Thr Cys Arg Cys Gly Ala				
	805	810	815	
ggg gtg cct cac tgt gag cgg gat gac tgt tca ctg cca ctg tcc tgt				2496
Gly Val Pro His Cys Glu Arg Asp Asp Cys Ser Leu Pro Leu Ser Cys				
	820	825	830	
ggc tcg ggg aag gag agt cga tgc tgt tcc cgc tgc acg gcc cac cgg				2544
Gly Ser Gly Lys Glu Ser Arg Cys Cys Ser Arg Cys Thr Ala His Arg				
	835	840	845	
cgg cca gcc cca gag acc aga act gat cca gag ctg gag aaa gaa gcc				2592
Arg Pro Ala Pro Glu Thr Arg Thr Asp Pro Glu Leu Glu Lys Glu Ala				
	850	855	860	

gaa ggc tct tagggagcag ccagagggcc aagtgaccaa gaggatgggg
 Glu Gly Ser
 865

2641

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<211> 867

<212> PRT

<213> Homo sapiens

<400> 10

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 Val Leu Pro Ile Arg Ser Glu Lys Glu Pro Leu Pro Val Arg Gly Ala
 35 40 45
 Ala Gly Cys Thr Phe Gly Gly Lys Val Tyr Ala Leu Asp Glu Thr Trp
 50 55 60
 His Pro Asp Leu Gly Glu Pro Phe Gly Val Met Arg Cys Val Leu Cys
 65 70 75 80
 Ala Cys Glu Ala Pro Gln Trp Gly Arg Arg Thr Arg Gly Pro Gly Arg
 85 90 95
 Val Ser Cys Lys Asn Ile Lys Pro Glu Cys Pro Thr Pro Ala Cys Gly
 100 105 110
 Gln Pro Arg Gln Leu Pro Gly His Cys Cys Gln Thr Cys Pro Gln Glu
 115 120 125
 Arg Ser Ser Ser Glu Arg Gln Pro Ser Gly Leu Ser Phe Glu Tyr Pro
 130 135 140
 Arg Asp Pro Glu His Arg Ser Tyr Ser Asp Arg Gly Glu Pro Gly Ala
 145 150 155 160
 Glu Glu Arg Ala Arg Gly Asp Gly His Thr Asp Phe Val Ala Leu Leu
 165 170 175
 Thr Gly Pro Arg Ser Gln Ala Val Ala Arg Ala Arg Val Ser Leu Leu
 180 185 190
 Arg Ser Ser Leu Arg Phe Ser Ile Ser Tyr Arg Arg Leu Asp Arg Pro
 195 200 205
 Thr Arg Ile Arg Phe Ser Asp Ser Asn Gly Ser Val Leu Phe Glu His
 210 215 220
 Pro Ala Ala Pro Thr Gln Asp Gly Leu Val Cys Gly Val Trp Arg Ala
 225 230 235 240
 Val Pro Arg Leu Ser Leu Arg Leu Leu Arg Ala Glu Gln Leu His Val
 245 250 255
 Ala Leu Val Thr Leu Thr His Pro Ser Gly Glu Val Trp Gly Pro Leu
 260 265 270
 Ile Arg His Arg Ala Leu Ala Ala Glu Thr Phe Ser Ala Ile Leu Thr
 275 280 285
 Leu Glu Gly Pro Pro Gln Gln Gly Val Gly Gly Ile Thr Leu Leu Thr
 290 295 300

Leu Ser Asp Thr Glu Asp Ser Leu His Phe Leu Leu Leu Phe Arg Gly
 305 310 315 320
 Leu Leu Glu Pro Arg Ser Gly Gly Leu Thr Gln Val Pro Leu Arg Leu
 325 330 335
 Gln Ile Leu His Gln Gly Gln Leu Leu Arg Glu Leu Gln Ala Asn Val
 340 345 350
 Ser Ala Gln Glu Pro Gly Phe Ala Glu Val Leu Pro Asn Leu Thr Val
 355 360 365
 Gln Glu Met Asp Trp Leu Val Leu Gly Glu Leu Gln Met Ala Leu Glu
 370 375 380
 Trp Ala Gly Arg Pro Gly Leu Arg Ile Ser Gly His Ile Ala Ala Arg
 385 390 395 400
 Lys Ser Cys Asp Val Leu Gln Ser Val Leu Cys Gly Ala Asp Ala Leu
 405 410 415
 Ile Pro Val Gln Thr Gly Ala Ala Gly Ser Ala Ser Leu Thr Leu Leu
 420 425 430
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 Glu Val Val Ala Met Thr Leu Glu Thr Lys Pro Gln Arg Arg Asp Gln
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 Arg Thr Val Leu Cys His Met Ala Gly Leu Gln Pro Gly Gly His Thr
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 Ala Val Gly Ile Cys Pro Gly Leu Gly Ala Arg Gly Ala His Met Leu
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 Leu Gln Asn Glu Leu Phe Leu Asn Val Gly Thr Lys Asp Phe Pro Asp
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Lys Thr Cys Pro Lys Ala Pro Pro Pro Ile Lys Lys Ser Asp Phe
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